Complete Summary

GUIDELINE TITLE

Prevention of rickets and vitamin D deficiency in infants, children, and adolescents.

BIBLIOGRAPHIC SOURCE(S)

Wagner CL, Greer FR, American Academy of Pediatrics Section on Breastfeeding, American Academy of Pediatrics Committee on Nutrition. Prevention of rickets and vitamin D deficiency in infants, children, and adolescents. Pediatrics 2008 Nov;122(5):1142-52. [163 references] PubMed

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Gartner LM, Greer FR, American Academy of Pediatrics, Section on Breastfeeding and Committee on Nutrition. Prevention of rickets and vitamin D deficiency: new guidelines for vitamin D intake. Pediatrics 2003 Apr;111(4 Pt 1):908-10. [20 references]

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SCOPE

DISEASE/CONDITION(S)

Rickets and vitamin D deficiency

GUIDELINE CATEGORY

Prevention

CLINICAL SPECIALTY

Family Practice
Nutrition
Pediatrics

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To provide recommendations for the prevention of rickets and vitamin D deficiency in infants, children, and adolescents

TARGET POPULATION

Infants, children, and adolescents

INTERVENTIONS AND PRACTICES CONSIDERED

Vitamin D supplements

MAJOR OUTCOMES CONSIDERED

Rates of rickets and vitamin D deficiency

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The Clinical Report, "*Prevention of rickets and vitamin D deficiency: new guidelines for vitamin D intake*" was based on a literature search including new references since the American Academy of Pediatrics (AAP) 2003 statement on this subject. Various sources were used including a PubMed search, reference list of related studies, reviews, editorials and a recent systematic review from the Agency for Healthcare Research and Quality (AHRQ) "Effectiveness & Safety of Vitamin D" in which one of the authors of the AAP clinical report participated. No specific inclusion/exclusion criteria were used for the literature report for this clinical report. Search terms included vitamin D, 25-hydroxy vitamin D, children, pediatric and were designed to identify appropriate observational studies, clinical trials, meta-analysis, and systemic reviews.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

To prevent rickets and vitamin D deficiency in healthy infants, children, and adolescents, a vitamin D intake of at least 400 IU/day is recommended. To meet this intake requirement, American Academy of Pediatrics (AAP) makes the following suggestions:

1. Breastfed and partially breastfed infants should be supplemented with 400 IU/day of vitamin D beginning in the first few days of life. Supplementation should be continued unless the infant is weaned to at least 1 L/day or 1 qt/day of vitamin D–fortified formula or whole milk. Whole milk should not be used until after 12 months of age. In those children between 12 months and 2 years of age for whom overweight or obesity is a concern or who have a family history of obesity, dyslipidemia, or cardiovascular disease, the use of reduced-fat milk would be appropriate (Daniels & Greer, 2008).
2. All nonbreastfed infants, as well as older children who are ingesting < 1000 mL/day of vitamin D–fortified formula or milk, should receive a vitamin D supplement of 400 IU/day. Other dietary sources of vitamin D, such as fortified foods, may be included in the daily intake of each child.
3. Adolescents who do not obtain 400 IU of vitamin D per day through vitamin D–fortified milk (100 IU per 8-oz serving) and vitamin D–fortified foods (such as fortified cereals and eggs [yolks]) should receive a vitamin D supplement of 400 IU/day.
4. On the basis of the available evidence, serum 25-hydroxyvitamin D (25-OH-D) concentrations in infants and children should be $\geq$ 50 nmol/L (20 ng/mL).
5. Children with increased risk of vitamin D deficiency, such as those with chronic fat malabsorption and those chronically taking antiseizure medications, may continue to be vitamin D deficient despite an intake of 400 IU/day. Higher doses of vitamin D supplementation may be necessary to achieve normal vitamin D status in these children, and this status should be determined with laboratory tests (e.g., for serum 25-OH-D and parathyroid hormone (PTH) concentrations and measures of bone-mineral status). If a vitamin D supplement is prescribed, 25-OH-D levels should be repeated at 3-month intervals until normal levels have been achieved. PTH and bone-mineral status should be monitored every 6 months until they have normalized.
6. Pediatricians and other health care professionals should strive to make vitamin D supplements readily available to all children within their community, especially for those children most at risk.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

These revised guidelines for vitamin D intake for healthy infants, children, and adolescents are based on evidence from new clinical trials and the historical precedence of safely giving 400 IU of vitamin D per day in the pediatric and adolescent population.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate prevention of rickets and vitamin D deficiency in healthy infants, children, and adolescents

POTENTIAL HARMS

Some forms of vitamin D contain 400 IU per drop, but such preparations must be prescribed with caution; explicit instruction and demonstration of use are essential because of the greater potential for a vitamin D overdose if several drops are administered at once.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

The guidance in this report does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2003 Apr (revised 2008 Nov)

GUIDELINE DEVELOPER(S)

American Academy of Pediatrics - Medical Specialty Society

SOURCE(S) OF FUNDING

American Academy of Pediatrics

GUIDELINE COMMITTEE

Section on Breastfeeding

Committee on Nutrition

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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GUIDELINE AVAILABILITY

Electronic copies: Available from the American Academy of Pediatrics (AAP) Policy Web site.

Print copies: Available from AAP, 141 Northwest Point Blvd., P.O. Box 927, Elk Grove Village, IL 60009-0927.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on August 18, 2003. The information was verified by the guideline developer on September 8, 2003. This NGC summary was updated by ECRI Institute on June 8, 2009. The updated information was verified by the guideline developer on June 9, 2009.

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